



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-0395; Product Identifier 2019-NE-11-AD]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney Canada Corp. Turboprop Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Pratt & Whitney Canada Corp. (P&WC) PW150A turboprop engines. This proposed AD was prompted by a determination by the manufacturer that certain PW150A engine high-pressure (HP) centrifugal impellers may exhibit a material microstructure anomaly that has a potential to adversely affect the low cycle fatigue characteristics of the part. This proposed AD would require replacement of the affected HP centrifugal impellers. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202 493 2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12 140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Pratt & Whitney Canada Corp., 1000 Marie-Victorin, Longueuil, Quebec, Canada, J4G 1A1; phone: 800-268-8000; fax: 450-647-2888; Internet: <http://www.pwc.ca>. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0395; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), the regulatory evaluation, any comments received, and other information. The street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Barbara Caufield, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7146; fax: 781-238-7199; email: barbara.caufield@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2019-0395; Product Identifier 2019-NE-11-AD” at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. The FAA will

consider all comments received by the closing date and may amend this NPRM because of those comments.

The FAA will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact we receive about this NPRM.

Discussion

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued AD CF-2018-12, dated April 27, 2018 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

Pratt & Whitney Canada (P&WC) has determined that certain PW150A engine HP centrifugal impellers, part number (P/N) 3049127-01, may exhibit a material microstructure anomaly which has a potential to adversely affect the low cycle fatigue (LCF) characteristics of the part, resulting in a lower LCF life than currently published in the engine model’s Airworthiness Limitations. The identified discrepancy was related to specific parts having been exposed to inappropriate temperature levels during the manufacturing process.

To address the subject potential material microstructure problem, P&WC issued SB 35331 Initial Issue, dated 16 March 2016, and then subsequently Revision 1, dated 3 May 2016, to recommend replacement of specific impeller serial numbers prior to the parts reaching the determined thresholds. Subsequent to the release of the SB, P&WC voluntarily initiated a fleet campaign to achieve this objective.

The actions specified by this AD are to ensure that HP centrifugal impellers with this potential material anomaly condition are contained in order to prevent severe engine damage and possible aeroplane damage caused by an impeller failure.

You may obtain further information by examining the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0395.

Related Service Information under 1 CFR Part 51

The FAA reviewed P&WC Service Bulletin (SB) PW150-72-35331, Revision No. 1, dated May 3, 2016. The SB describes procedures for replacement of the affected HP centrifugal impeller. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

This product has been approved by the aviation authority of Canada and is approved for operation in the United States. Pursuant to our bilateral agreement with Canada, they have notified us of the unsafe condition described in the MCAI and service information referenced in this proposed AD. The FAA is proposing this AD because we evaluated all the relevant information provided by Transport Canada Civil Aviation and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require replacement of affected HP centrifugal impellers.

Differences Between this Proposed AD and the MCAI or Service Information

P&WC SB No. PW150-72-35331, Revision No. 1, dated May 3, 2016 (“the SB”), indicates HP centrifugal impellers with serial numbers (S/Ns) listed in Table 1 of the SB should be removed prior to March 31, 2016 (15 days after the issue date of P&WC SB No. 35331, Initial Issue) and HP centrifugal impellers with S/Ns listed in Table 2 of the SB should be removed within 150 flight cycles or prior to accumulating 8,000 flight cycles since new. Our proposed AD would require removal of only the HP centrifugal impellers with S/Ns listed in Table 2 of the SB since the HP centrifugal impellers with S/Ns listed in Table 1 have already been removed from service. Our proposed AD is consistent with the SB and the MCAI in prohibiting the installation of any HP centrifugal impeller listed in Table 1 or Table 2 of the SB after the effective date of the proposed AD.

Costs of Compliance

The FAA estimates that this proposed AD affects 20 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Replace HP centrifugal impeller	100 work-hours X \$85 per hour = \$8,500	\$201,921	\$210,421	\$4,208,420

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency’s authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, the FAA certifies this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Pratt & Whitney Canada Corp.: Docket No. FAA-2019-0395; Product Identifier 2019-NE-11-AD.

(a) Comments Due Date

The FAA must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Pratt & Whitney Canada Corp. (P&WC) PW150A turboprop engines with a high-pressure (HP) centrifugal impeller, part number (P/N) 3049127-01, installed.

(d) Subject

Joint Aircraft System Component (JASC) 7230, Turbine Engine Compressor Section.

(e) Unsafe Condition

This AD was prompted by a determination by the manufacturer that certain PW150A engine HP centrifugal impellers may exhibit a material microstructure anomaly that has a potential to adversely affect the low cycle fatigue characteristics of the part. The FAA is issuing this AD to prevent failure of certain HP centrifugal impeller. The unsafe condition, if not addressed, could result in uncontained release of the HP centrifugal impeller, damage to the engine, and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Remove HP centrifugal impeller, P/N 3049127-01, with any serial number listed in Table 2 of P&WC Service Bulletin (SB) No. PW150-72-35331, Revision No. 1, dated May 3, 2016, prior to accumulating 8,000 flight cycles since new or within 150 flight cycles after the effective date of this AD, whichever occurs later, and replace with a part eligible for installation.

(h) Installation Prohibition

After the effective date of this AD, do not install an HP centrifugal impeller, P/N 3049127-01, with any serial number listed in Table 1 or 2 of P&WC SB No. PW150-72-35331, Revision No. 1, dated May 3, 2016, onto any engine.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ECO Branch, send it to the attention of the person identified in paragraph (j)(1) of this AD. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

(1) For more information about this AD, contact Barbara Caufield, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7146; fax: 781-238-7199; email: barbara.caufield@faa.gov.

(2) Refer to Transport Canada Civil Aviation (TCCA) AD CF-2018-12, dated April 27, 2018, for more information. You may examine the TCCA AD in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating it in Docket No. FAA-2019-0395.

(3) For service information identified in this AD, contact Pratt & Whitney Canada Corp., 1000 Marie-Victorin, Longueuil, Quebec, Canada, J4G 1A1; phone: 800-268-8000; fax: 450-647-2888; Internet: <http://www.pwc.ca>. You may view this referenced service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

Issued in Burlington, Massachusetts, on June 17, 2019.

Robert J. Ganley,
Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.
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